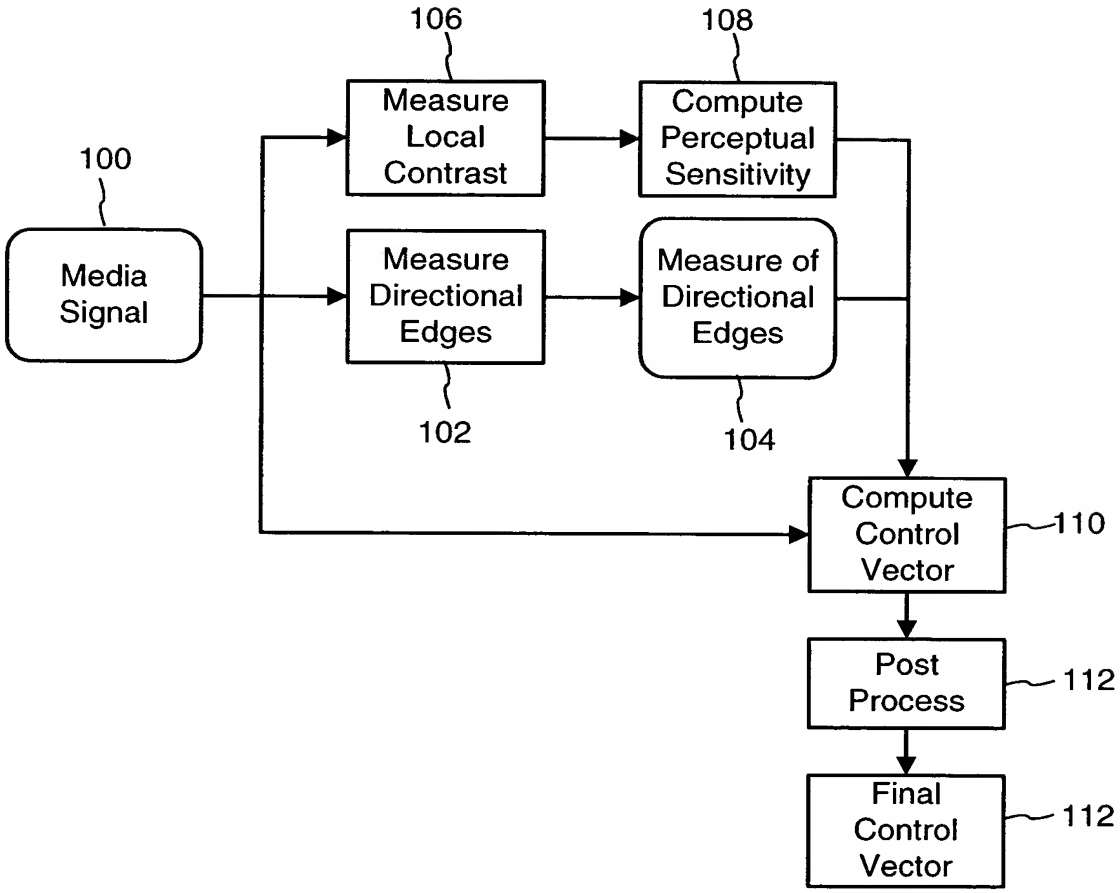
Fig. 1


106
108
Measure Local Contrast
Compute Perceptual Sensitivity
100
Media Signal
Measure Directional Edges
Measure of Directional Edges
102
104
Compute Control Vector
110
Post Process
112
Final Control Vector
112

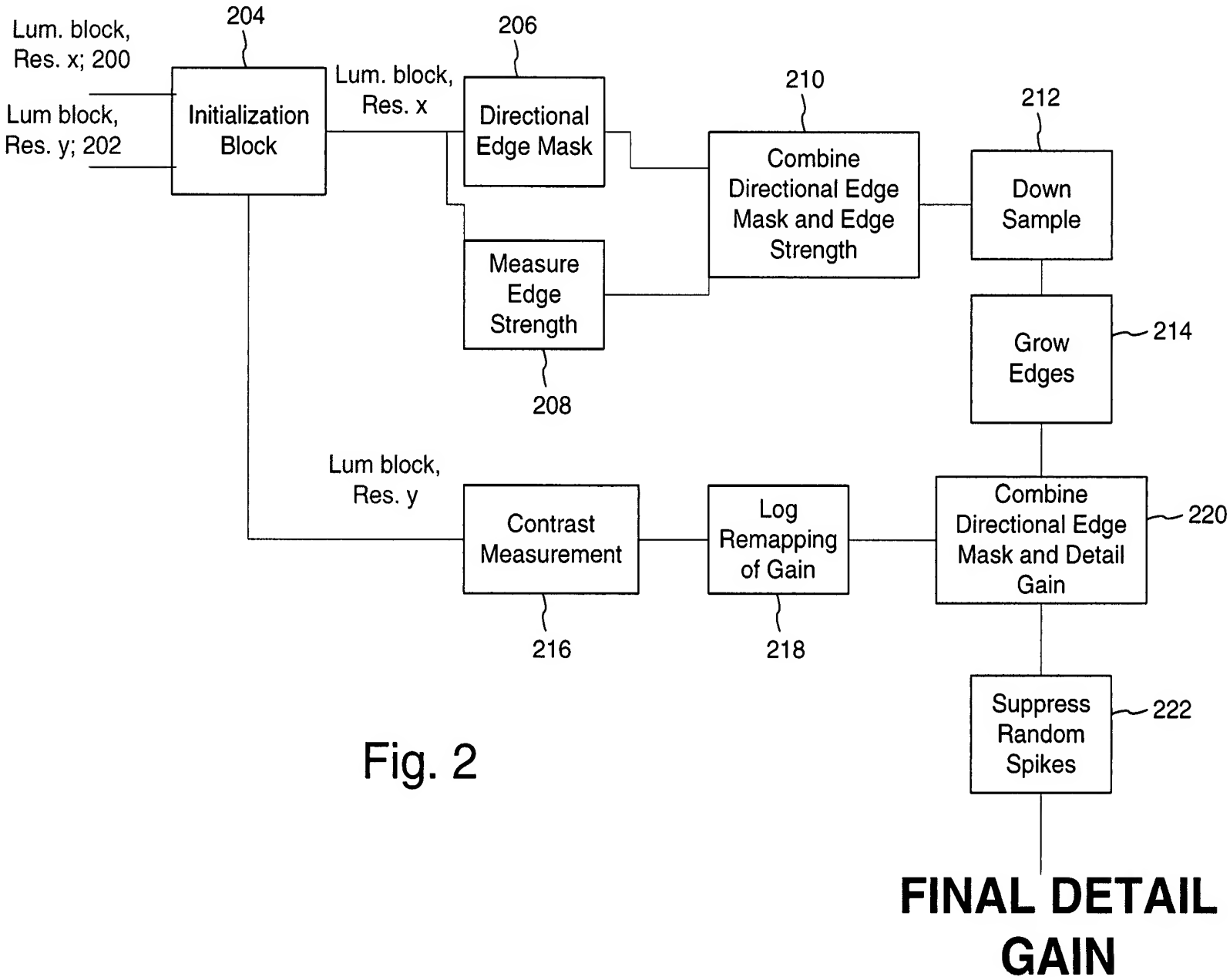
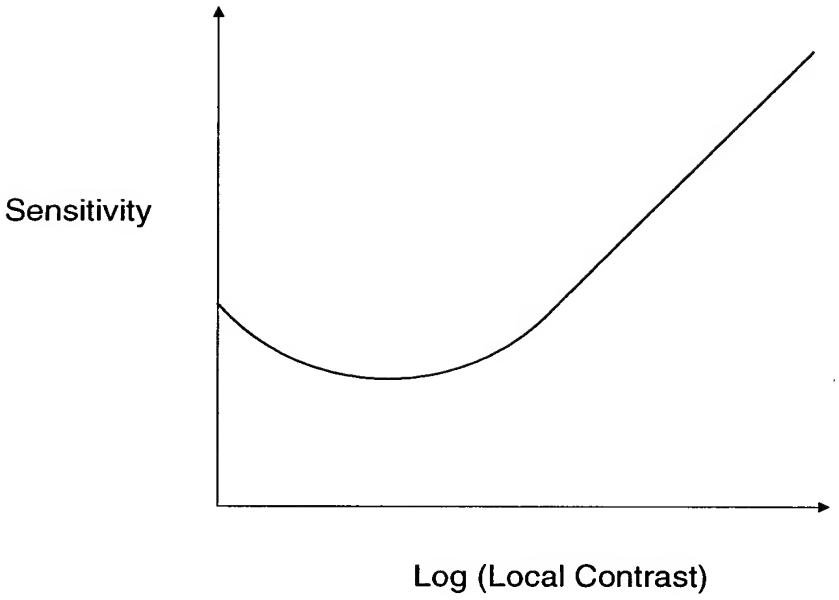
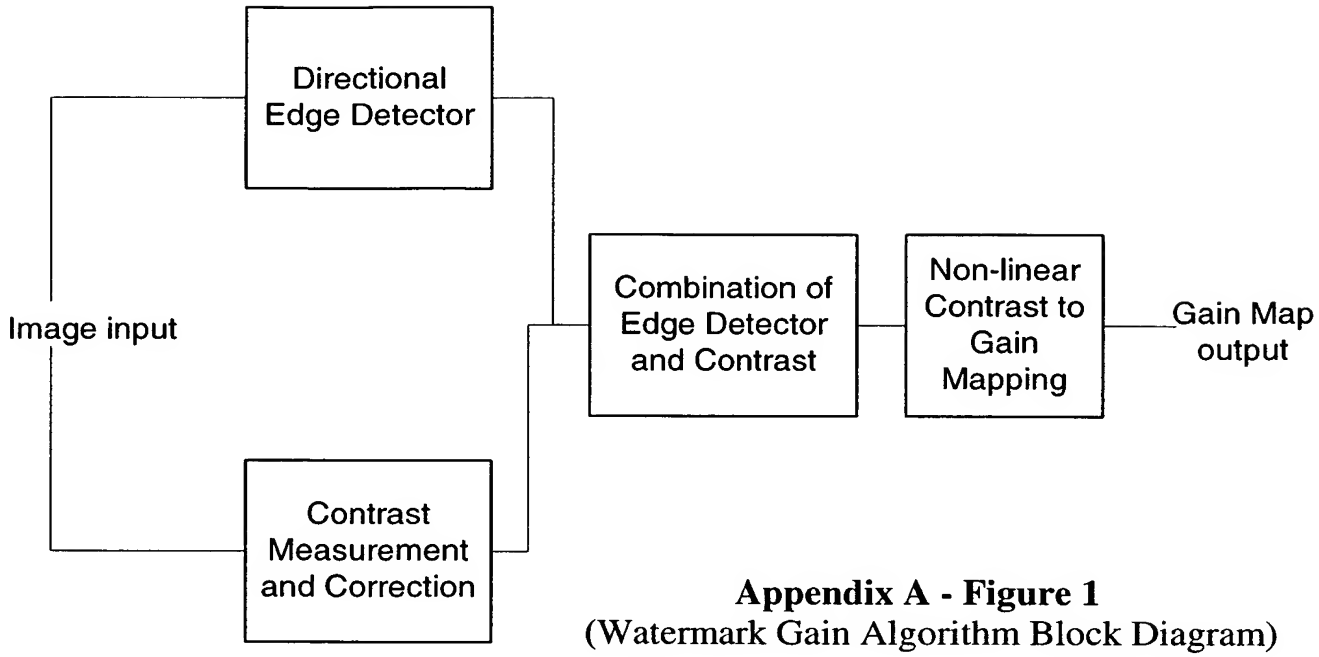

Lum. block, Res. x; 200
Lum block, Res. y; 202
204
Initialization Block
Lum. block, Res. x
206
Directional Edge Mask
Measure Edge Strength
208
210
Combine Directional Edge Mask and Edge Strength
212
Down Sample
Grow Edges
214
Lum block, Res. y
Contrast Measurement
216
Log Remapping of Gain
218
Combine Directional Edge Mask and Detail Gain
220
Suppress Random Spikes
222
FINAL DETAIL GAIN

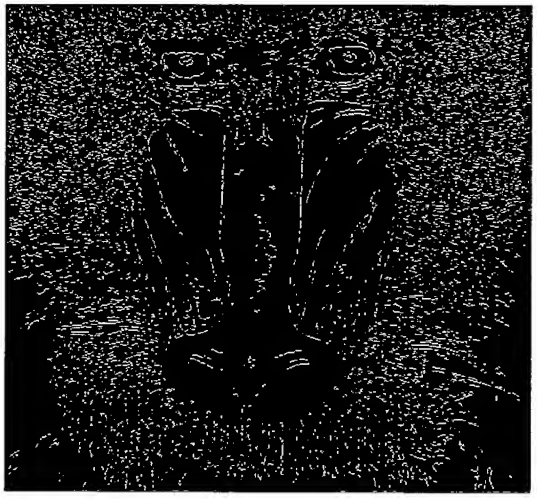
Fig. 2

Fig. 3

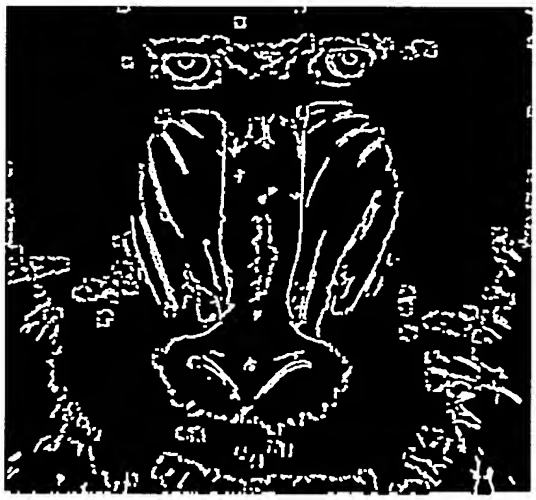




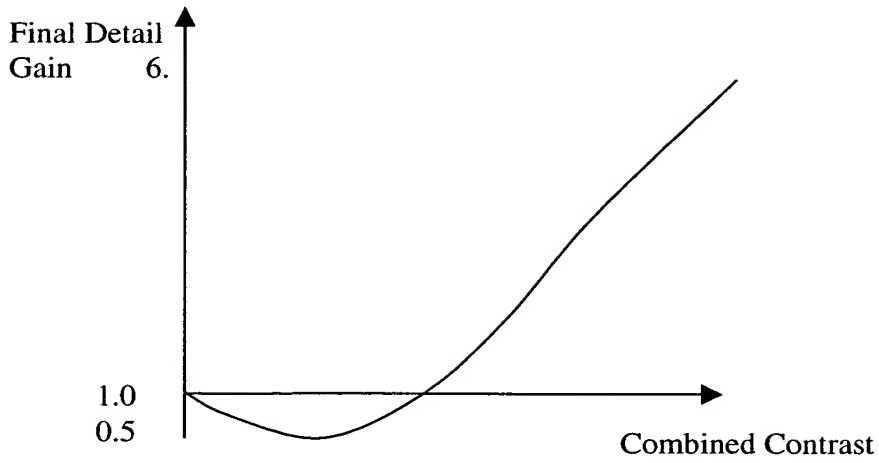
Appendix A - Figure 1
(Watermark Gain Algorithm Block Diagram)



Appendix A - Figure 2a
(Canny Edge Mask of "Mandrill")



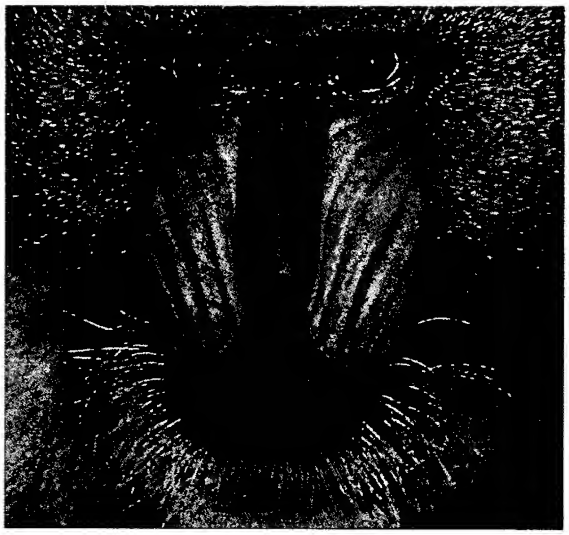
Appendix A - Figure 2b
(Our modified Canny Edge Mask of "Mandrill")



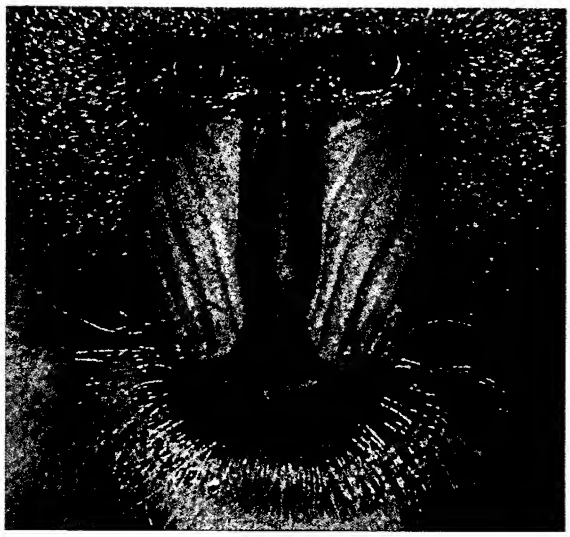
Appendix A -- Figure 3
(Combined Contrast to Watermark Gain Mapping Function)

Appendix A -- Figure 4a
(Watermark Gain Based on Simple Contrast, watermark accentuated for effect)

Appendix A -- Figure 4b
(Watermark Gain Based on Contrast with Edge Suppression, watermark accentuated for effect)



Appendix A -- Figure 5a
(Mandrill without Watermark)



Appendix A -- Figure 5b
(Mandrill with Watermark using New Gain Algorithm)

Appendix A -- Figure 6a
(Image of Child without Watermark)

Appendix A -- Figure 6b
(Image of Child with Watermark using New Gain Algorithm, watermark accentuated for effect)